

REMARKS

Claims 1-3, 5-9, 11-20, and 23-29 remain in the application. Claims 4, 10, 21, and 22 have been cancelled. Claims 1, 20 and 29 are in independent form.

First, claims 25-26 stand rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner noted that in claim 25, line 2, the limitation of "the at least one pin" lacks antecedent basis. In response, Applicant has amended claim 24 to depend from claims 23. Claim 23 properly introduces a plurality of pins. Claim 24 depends from claim 23 and claim 25 depends from claim 24, thus providing proper antecedent basis for the pins.

Claims 1-15, 17-21, and 23-29 stand rejected based on several contentions by the Examiner. However, claims 16 and 22 are indicated as being allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

More specifically, claims 1-2, 4-12, 14-15, 19-20, 24, and 28-29 stand rejected under 35 USC 102(b) as being anticipated by Letournoux et al. (U.S. Patent No 4,348,050) and by Pipon et al. (U.S. Patent No. 4,770,464). Additionally, claims 1-12, 14-15, 19-20, 23-26, and 28-29 stand rejected under 35 USC 102(b) as being anticipated by Kojima et al (U.S. Patent No. 6,007,152) and by Kojima et al. (U.S. Patent No. 6,092,874). Still further, claims 1-12, 14-15, 19-21, 23-26, and 28-29 stand rejected under 35 USC 102(e) as being anticipated by Moriyama et al. (U.S. Patent No. 6,669,296). And finally, claims 1-2, 4-15, 17-21, 24, and 27-29 stand rejected under 35 USC 102(e) as being anticipated by Lange (U.S. Patent No. 6,676,217).

In response, first Applicant has amended independent claim 1 to set forth a recliner assembly 16 for use with a seat having a seat cushion 12 and a seat back 14 pivotal between a plurality of reclined positions with respect to the seat cushion, the recliner assembly comprising: a fixed plate 30 adapted to be secured to the seat cushion; a mobile plate 20 adapted to be secured to the seat back, the mobile plate 20 coupled to the fixed plate 30 for providing pivotal movement of the seat back through the plurality of reclined positions, the mobile plate 20 including an annular rim 22 defining an axis and a plurality of teeth 24 extending along the annular rim; a plurality of sectors 40 each having a rack of teeth 42 coupled between the fixed and mobile plates, each sector 40 movable between a locked condition having the rack of teeth 42 engaged with the plurality of teeth 24 of the mobile plate for maintaining the seat back in any of the plurality of reclined positions and an unlocked condition having the rack of teeth 42 disengaged from the plurality of teeth 24 of the mobile plate for allowing selective adjustment of the seat back relative to the seat cushion; a cam 70 extending about the axis and selectively engagable with each sector 40 and rotatably supported between the fixed and mobile plates for moving each sector between the locked and unlocked conditions in response to rotation of the cam 70, the cam 70 radially movable relative to each sector 40 for preventing binding of the sectors during movement between the locked and unlocked conditions; and wherein the rack of teeth 42 of at least one sector 40 extends between opposing radially ends of the sector and wherein individual teeth at the ends of the sector are shorter radially compared to adjacent teeth between the ends of the rack of teeth.

Contrary to the Examiner's contentions, none of the cited prior art references disclose, teach, or suggest a recliner having a plurality of sectors coupled between a fixed plate and a moveable plate and having a rack of teeth engageable with a plurality of teeth on the mobile

plate in a locked condition wherein the individual teeth at the ends of the sectors are shorter radially than the adjacent teeth between the ends of the rack of teeth. Rather, each of the cited prior art reference disclose sectors or pawls having a rack of teeth of equal pitch and equal radial length or size. None of the references disclose individual teeth of different size, and particularly, individual teeth at the ends being shorter radially than adjacent teeth between the ends of the rack of teeth on the sector. Therefore, claim 1 clearly defines Applicant's invention over each of the cited prior art references.

Next, Applicant has amended independent claim 20 to include all of the limitations of claim 21 and allowable claim 22. Therefore, independent claim 20 and dependent claims 23-28 should all be in condition for allowance.

Finally, Applicant has amended independent claim 29 to set forth a recliner assembly 16 for use with a seat having a seat cushion 12 and a seat back 14 pivotal between a plurality of reclined positions with respect to the seat cushion, the recliner assembly comprising: a fixed plate 30 adapted to be secured to the seat cushion; a mobile plate 20 adapted to be secured to the seat back, the mobile plate coupled to the fixed plate for pivotal movement of the seat back through the plurality of reclined positions, the mobile plate 20 including an annular rim 22 defining an axis and a plurality of teeth 24 extending along the annular rim; a plurality of sectors 40 each having a rack of teeth 42 coupled between the fixed and mobile plates, each sector movable between a locked condition having the rack of teeth engaged with the plurality of teeth of the mobile plate for maintaining the seat back in any of the plurality of reclined positions and an unlocked condition having the rack of teeth disengaged from the plurality of teeth of the mobile plate for allowing selective adjustment of the seat back relative to the seat cushion, wherein the fixed plate 30 includes wedge surfaces 34 formed thereon for engaging and guiding

the sectors 40 between the locked and unlocked conditions; a cam 70 extending about the axis and selectively engagable with each of the sectors and rotatably supported between the fixed and mobile plates for moving the sectors between the locked and unlocked conditions in response to rotation of the cam, the cam radially movable relative to the sectors for preventing binding of the sector during movement between the locked and unlocked conditions; and wherein the plurality of sectors 40 being unequally spaced about the axis.

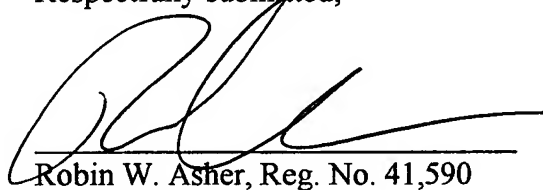
That is, none of the cited prior art references disclose a recliner having a plurality of sectors coupled between a fixed plate and moveable plate for radial movement between a locked and unlocked condition therebetween wherein the sectors are unequally spaced about the axis of the plates. That is, all of the cited prior art references disclose and teach use of a plurality of sectors or pawls which are spaced equal distances apart about the radius of the axis defined by the plates or pivot shaft. Applicant's invention positions the sectors at unequal angular spacing about the center pivot axis so as to provide an increased range of increment adjustment of the recliner by partially and fully engaging the racks of teeth 42 with the teeth 24 around the annular rim 22 of the mobile plate 20.

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Accordingly, it is believed that the application is in condition for immediate allowance and Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Should the Examiner have any questions regarding the response to this Office Action, the Examiner is invited to contact the undersigned attorney for the applicant.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'RW Asher', written over a horizontal line.

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